ARNAV KUMAR

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Education

- **Carnegie Mellon University**, Language Technologies Institute, School of Computer Science   Pittsburgh, PA
  - Master of Science (Topics: NLP, Machine Learning and Information Retrieval)   (Aug 2017 - Dec 2018)
  - Project: Conversational Search and Knowledge Acceleration with Dr. Jamie Callan
    * Given a broad query, discover its subtopics, possible search paths and concepts based on initial search results.
    * Support hands-free exploration of a broad subject via the discovered topic-tree on voice assistants.
- **Nanyang Technological University**, School of Computer Science and Engineering   Singapore
  - Bachelor of Engineering (First Class Honours) in Computer Science.   (Aug 2010 – Jun 2014)
  - Specialization in Intelligent Systems, Minor in Business.

Professional Experience

- **Google, LLC.** - *Software Engineer, Ads Integrity (Machine Learning Infrastructure)*, Pittsburgh, PA (Jan 2019 - Present)
  - Built pipelines to enable offline model evaluations on past traffic, cutting down total evaluation time by 90%.
  - Improving model development and evaluation pipelines by building a composable tooling suite.
- **Zendesk, Inc.** - *Senior Software Engineer, Zendesk Chat (Backend/Platform)*, Singapore   (Jul 2016 - Aug 2017)
- **Zendesk, Inc.** - *Software Engineer, Zendesk Chat (Backend/Platform)*, Singapore   (Jul 2014 - Jul 2016)
  - As *Engineering Lead* for the internal **push-notification microservice** project, re-wrote session management logic, architected new systems and infrastructure to support robust push notification delivery.
  - As *Engineering Lead* for the internal microservice for **feature entitlement**, designed the underlying rule-engine, led development for the service, serving ~20k RPS at peak.
  - Developed various iterations of the application that powers live chat, working on features like REST API for ongoing chats, support for concurrent sessions, low-level protocol enhancements etc.
  - Replaced legacy billing system by integrating with the shared Zendesk-wide billing service, followed by writing mechanisms to migrate existing customers to it en masse.
  - Wrote the **event framework** that produces product-wide events to Kafka. Added a system to defer high-volume writes via Logstash.
  - Made several improvements to the unit test suite: improvements to the test suite lifecycle, increased coverage and heavily reduced suite run-times with micro-optimizations.
  - *Miscellanous Responsibilites* - Hiring; mentoring; maintenance of dev environments, staging servers & CI setup. *Technologies Used* - Python, Django, Flask, Celery, Nose, JavaScript, Node, Redis & Redis Cluster, Memcached, Kafka, Logstash, MySQL, Docker, etc.
- **IBM Corporation** - *Software Engineering Intern*, Singapore   (May 2013 - Aug 2013)
- **IBM Corporation** - *Software Engineering Intern*, Singapore   (Jun 2012 - Dec 2012)
  - Built the fully-featured, UIWebView-based embedded browser for a mobile port of IBM Security Access Manager for Enterprise Single Sign-On, ISAM-ESSOm, for providing web single sign-on capabilities on the iOS platform.

Open Source Contributions (Selected)

- **TwitterCLDR** - Added features such as Text Segmentation, Unicode Regex Parser, Rule-based number formatting, etc to Twitter's open source library for tools to work with Unicode in JavaScript.
- **raven-python** - Added per message capture-sampling and support for logging filters and exclusions for Flask.
- **txconnpool** - Added support to create a connection pool to a pool of servers rather than just 1.
- **blinker** - Added support for sending signals without propagating resulting exceptions and support for connecting via multiple objects in a single decorator.

Technical Skills

- Languages: Competent: Python. Familiar: Java, Javascript, CoffeeScript, C++ and others.
- Technologies (misc.): Django, Flask, Celery, Nose, Node, Jasmine, Redis, Redis Cluster, Memcached, MySQL, Kafka, Docker, Logstash, Unix etc.